BDE-RFM204A USER GUIDE

Introduction

This user guide is for BDE-RFM204A, a Wireless Module based on TI CC1310.
It is a quick start guide for how to connect the module with the evaluation board BDE-EVB07 or with the TI launchpad, and how to build the first application. It also shows a demo for how BDE-RFM204A receives a data packet that is sent from another BDE-RFM204A.

Get Ready

The following tools are recommended to develop with BDE-RFM204A.

Hardware tools:

- Two modules of BDE-RFM204A (BDE-RFM204A-915-BDE Technology Inc. (bdecomm.com) BDE-RFM204A-868-BDE Technology Inc. (bdecomm.com))

- Two BDE-ADP05 V1.0 (adaptor board)

- PC or Laptop

- Two BDE-EVB07 (BDE-EVB07-BDE Technology Inc. (bdecomm.com))
  or

- Two TI Launchpad (LAUNCHXL-CC1310 Evaluation board | TI.com)

- USB cable for power supply and debugging

Software tools:

- Terminal software such as CCS, IAR.

- CCS download

- Software Development Kit (SDK)

Build Your First Application

Once have the Hardware and Software tools in place, please following the following steps:

A. Connect the Hardware

   If chose EVB07:
   Use USB cable to connect EVB07 and PC or laptop. Plug BDE-RFM204A with the adaptor board into the dev board and connect all the pins with Jumpers as the following picture shows.

BDE • **TEXAS INSTRUMENTS** **Partner**
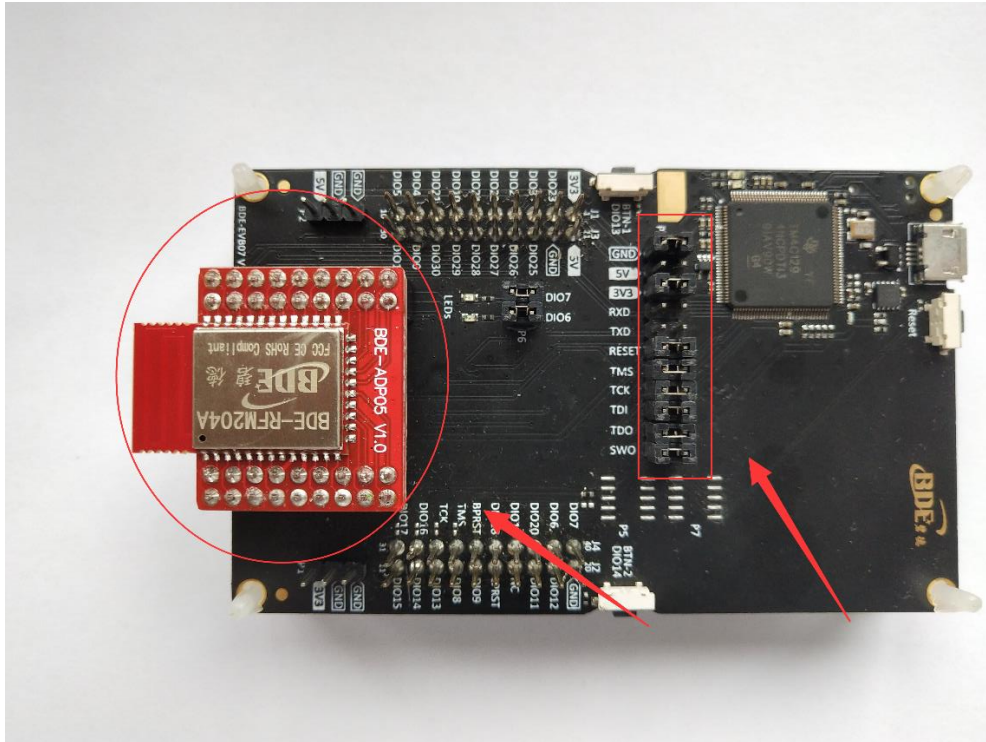
If chose TI Launchpad:

The connection is as following.
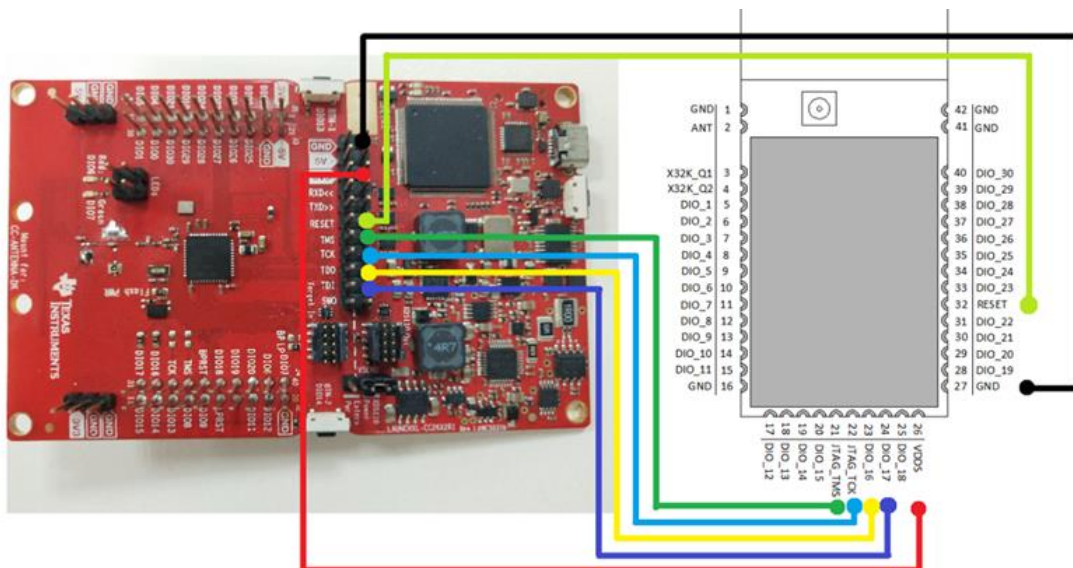
| Connection Designator	BDE-RFM204A	LaunchPad Pin
3V3 Power	VDD	3V3
Ground	GND	GND
RST	RST	RESET
TMS	TMS	TMS
TCK	TCK	TCK
TDO	DIO16	TDO
TDI	DIO17	TDI

Optional: TDO，TDI，RXD，TXD

B. Build the Application

■ **Download and install the CCS and SDK**

From the above links, follow the instructions in the following steps to download and install the CCS and SDK.

■ **CCS Installation**

1. Click on this option
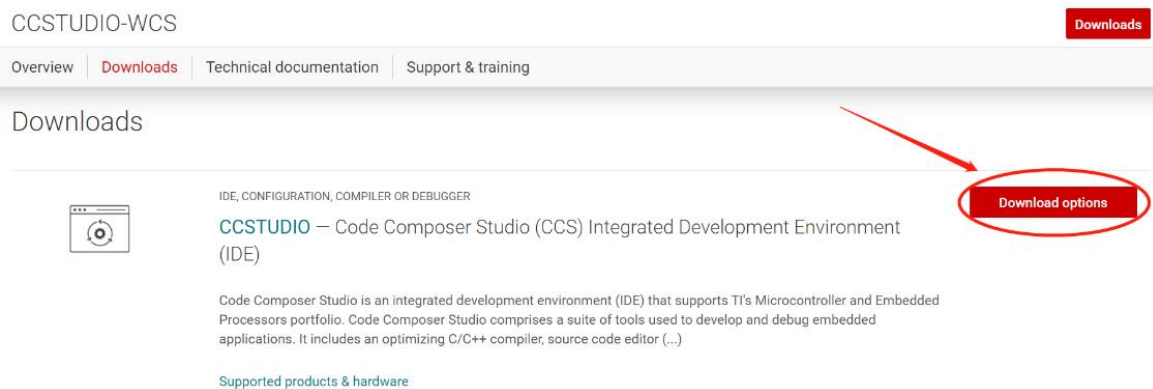
2. Select an option to download CCS

Download options   ✕

Code Composer Studio (CCS) Integrated Development Environment (IDE)

Version: 10.3.0.00007
Release date: 05 Apr 2021

SINGLE FILE INSTALLERS

↓ Windows single file installer for CCS IDE (1181753652 KB)

↓ Linux single file installer for CCS IDE (1102001729 KB)

↓ macOS single file installer for CCS IDE (1083552986 KB)

ON-DEMAND INSTALLERS

↓ Windows on-demand installer for CCS IDE (40136960 KB)

↓ Linux on-demand installer for CCS IDE (25338386 KB)

↓ macOS on-demand installer for CCS IDE (24595266 KB)

3.   Unzip the package to a local disc

🗜 CCS10.3.0.00007_win64.zip	2021/4/19 11:11	WinRAR ZIP	
📁 CCS10.3.0.00007_win64	2021/4/20 11:36	文件夹	

4.   Click the setup of CCS

📁 binary	2021/3/29 21:38
📁 CCS10.3.0.00007_win64	2021/4/19 11:23
📁 components	2021/3/29 21:38
📁 features	2021/3/29 21:38
📄 artifacts.jar	2021/3/29 21:38
📦 ccs_setup_10.3.0.00007.exe	2021/3/29 21:37
📄 content.jar	2021/3/29 21:38
📄 README_FIRST_win64.txt	2021/3/29 21:38
📄 timestamp.txt	2021/3/29 21:38

5.   Click "Next"
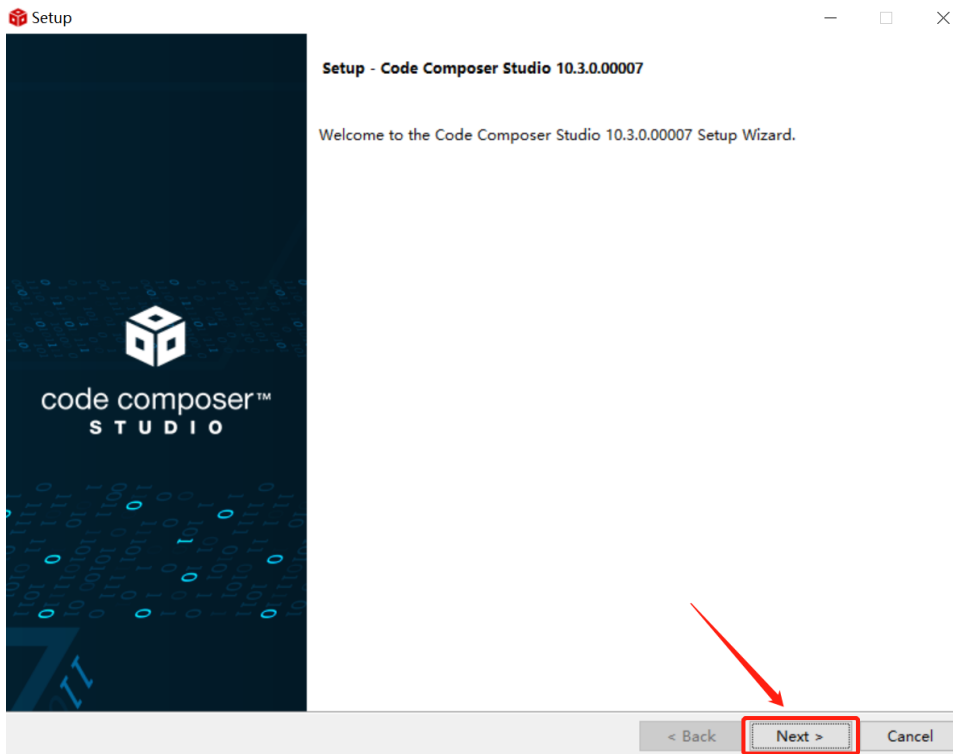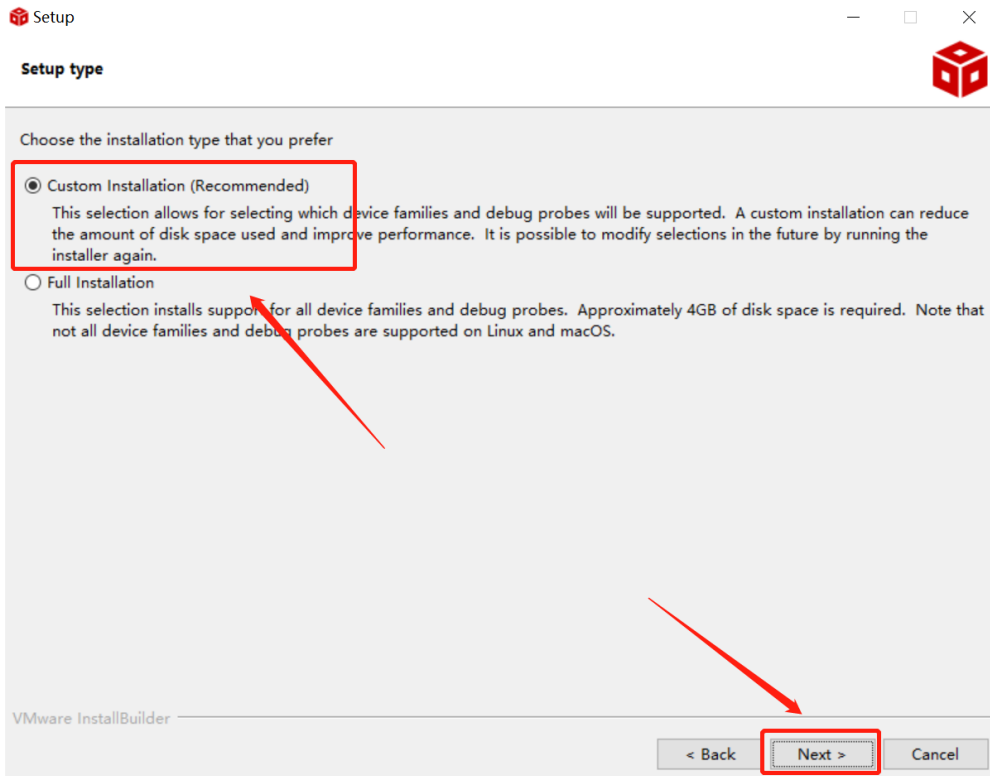
6. Select the default option
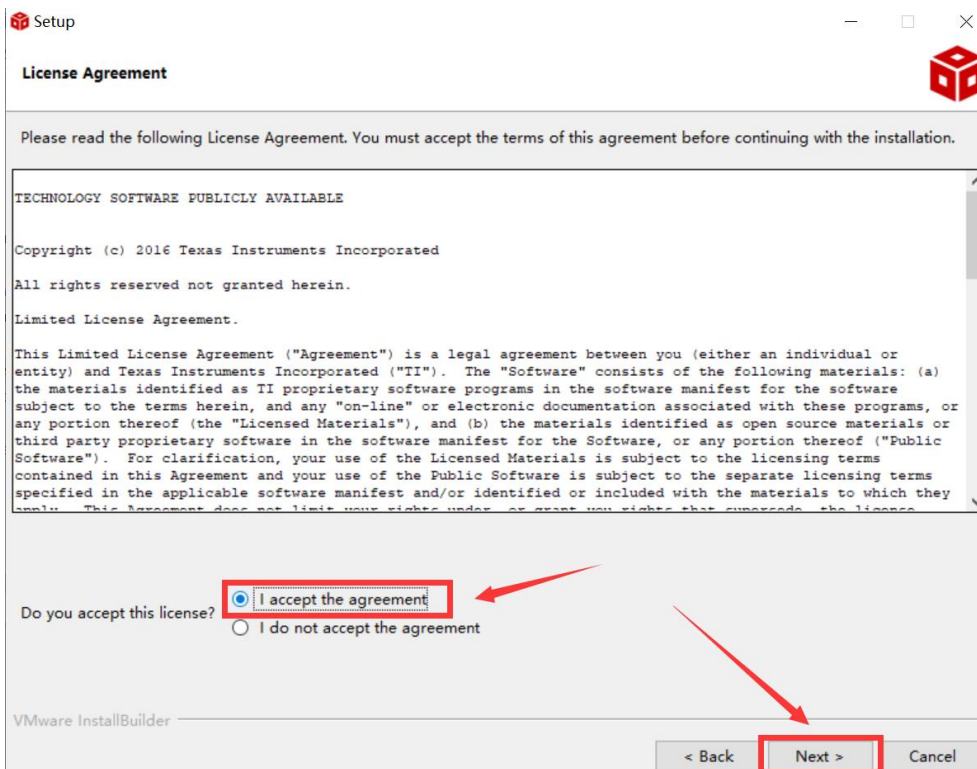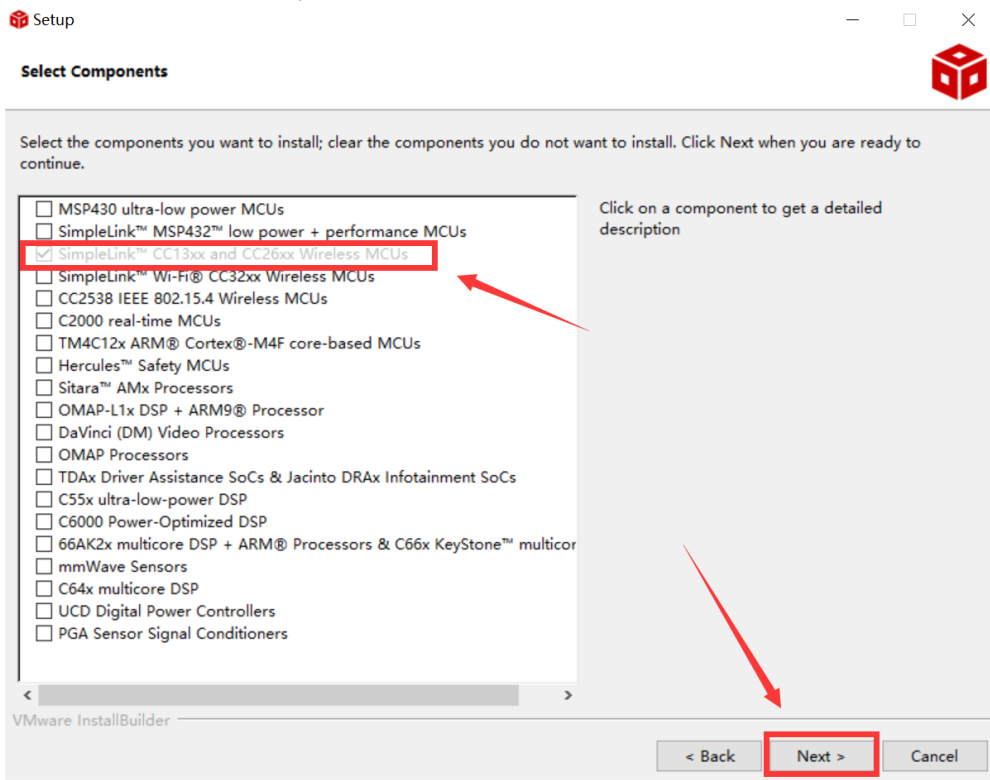
7.   Click "Next"
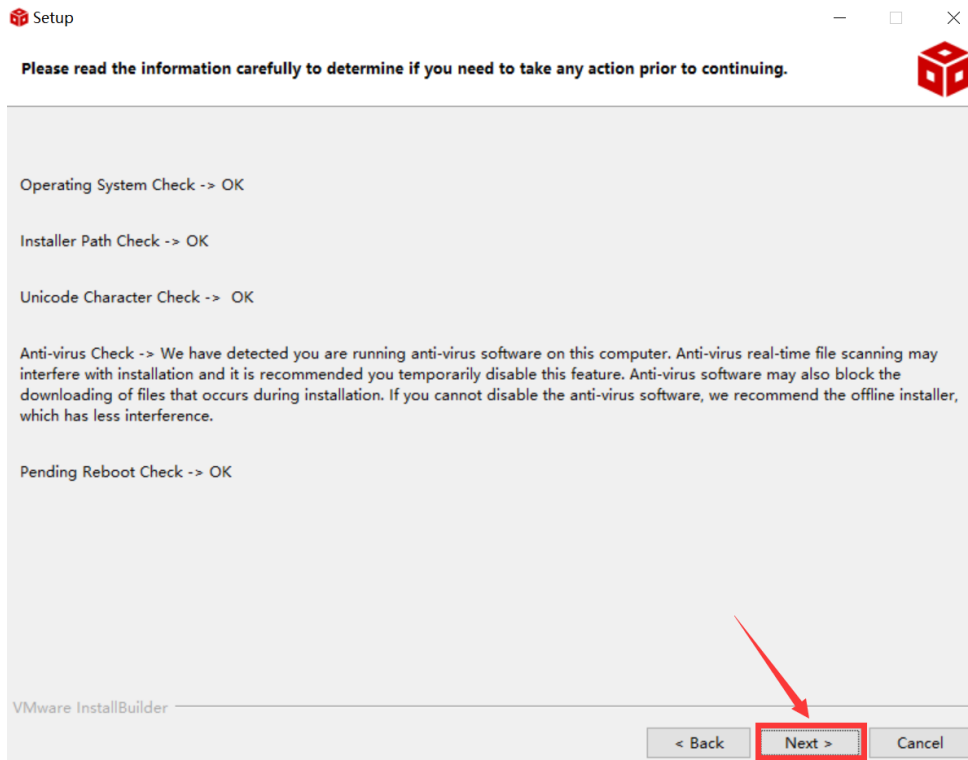
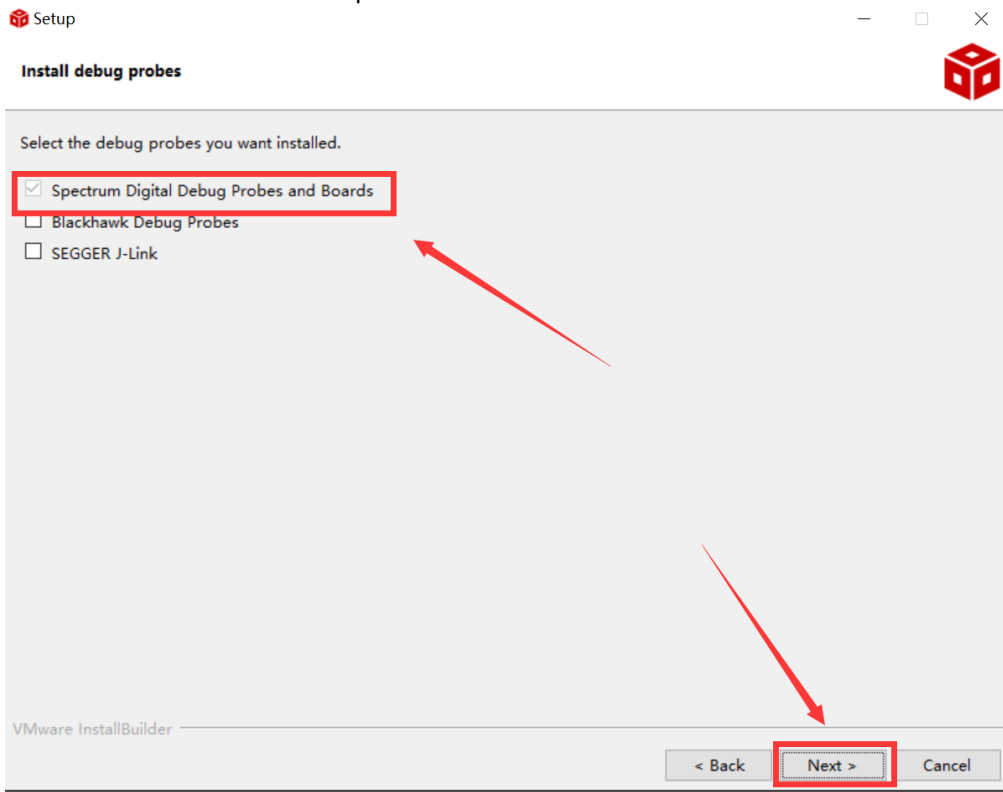8.   Select the Installation Directory
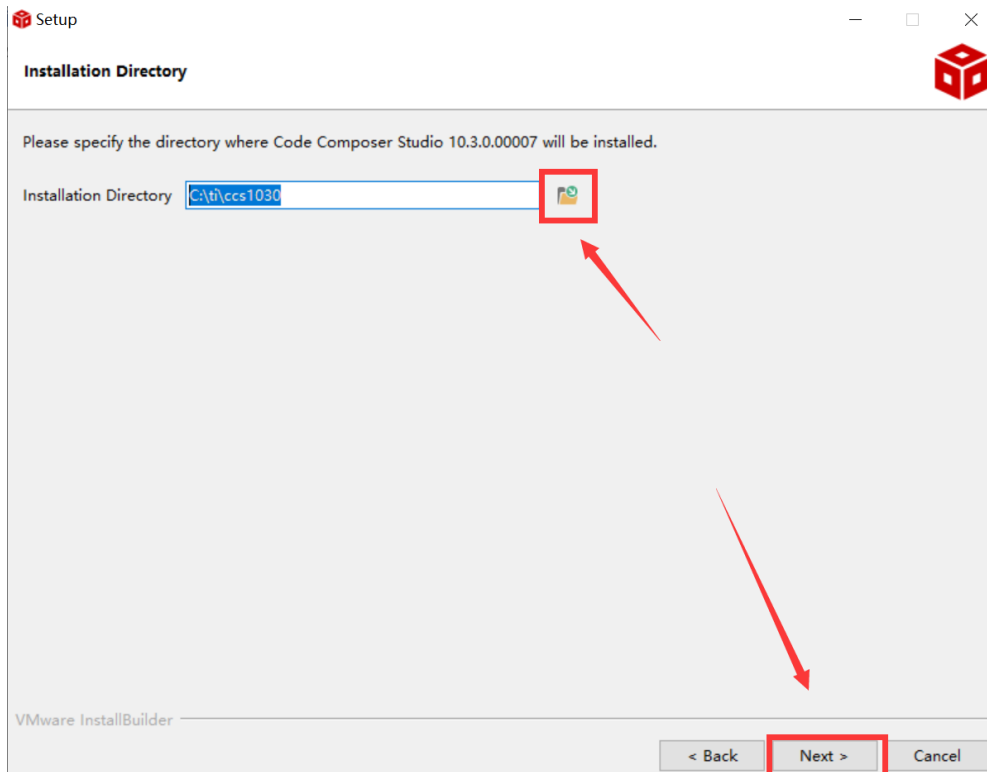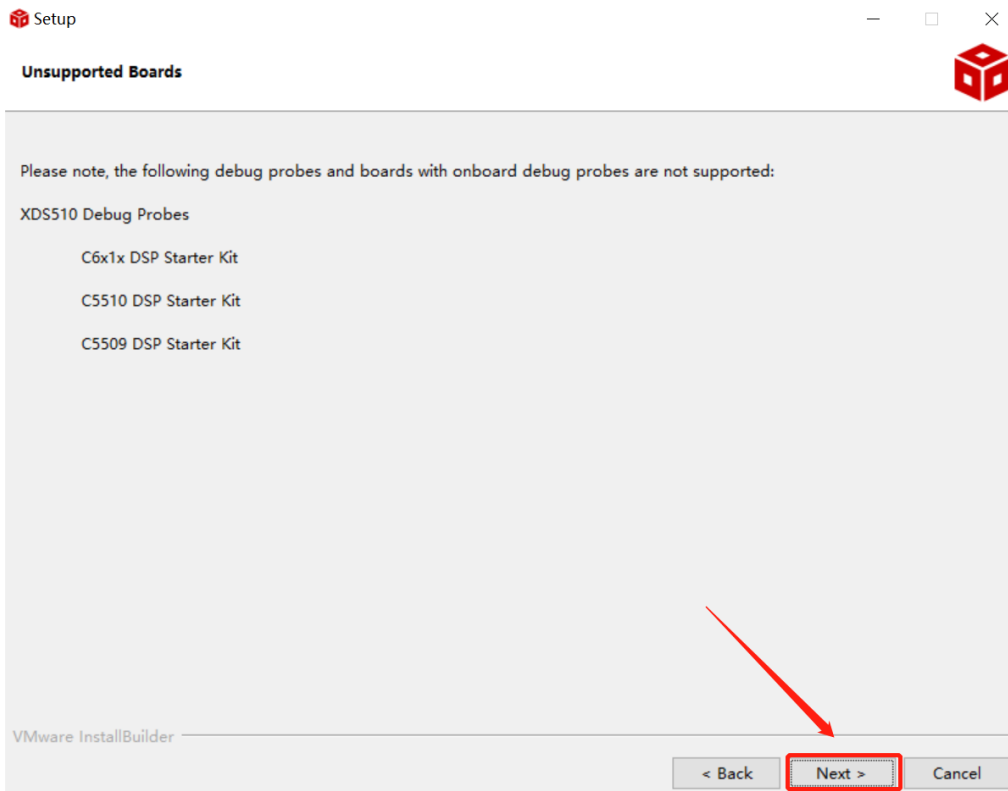
9. Select the default option
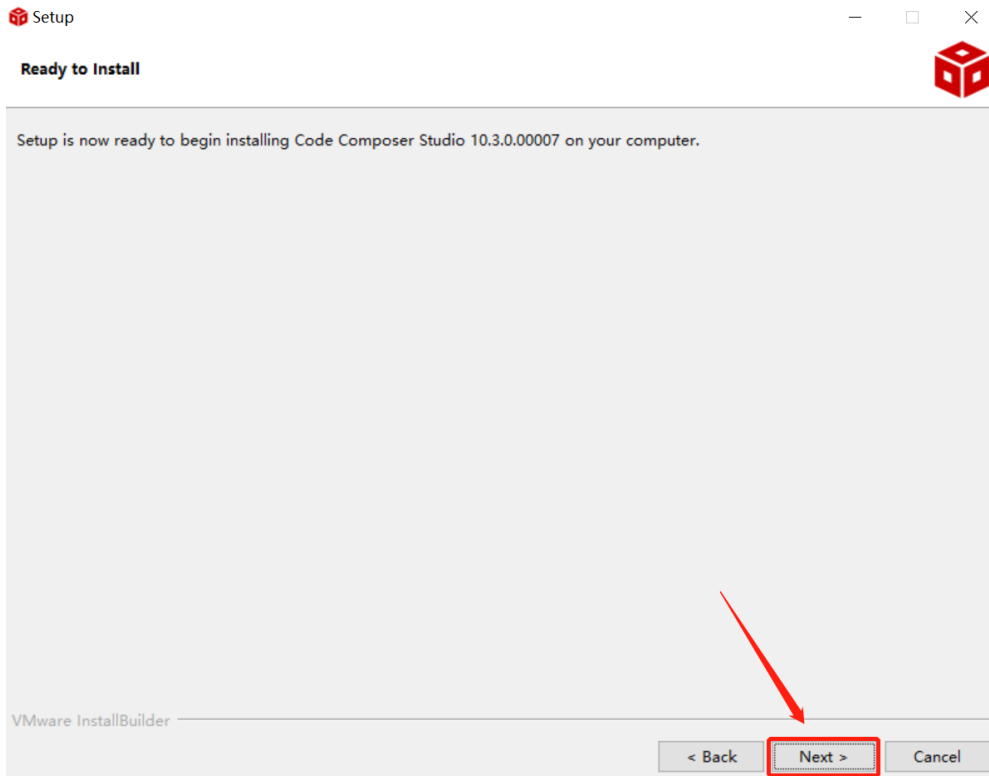

10. Select the component
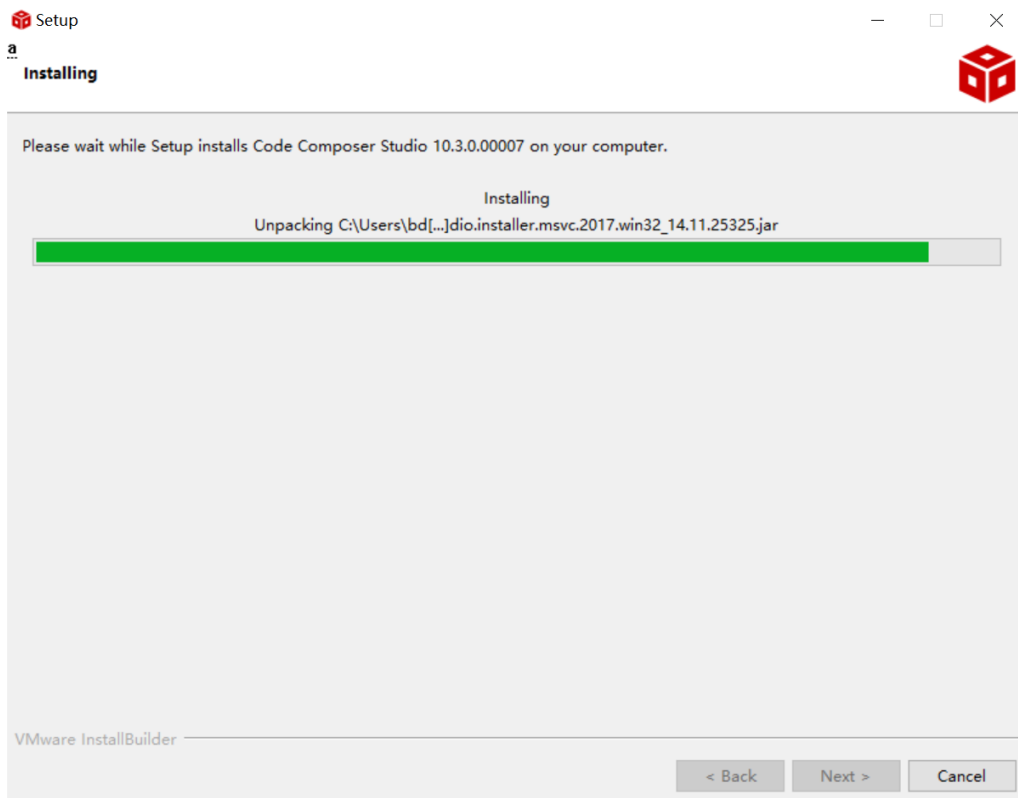
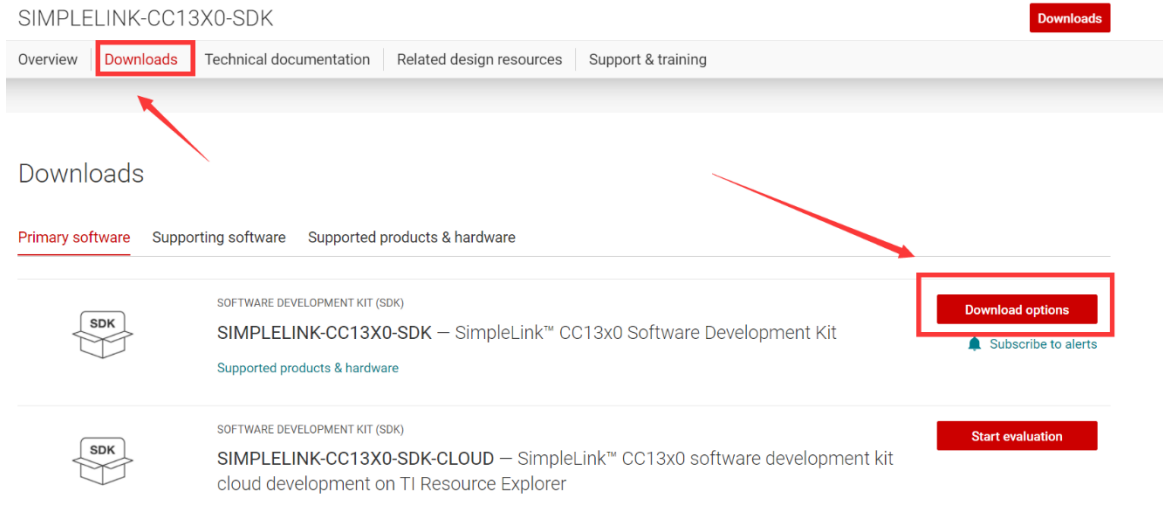11. Select the default option

12. Click "Next"

13. Click "Next"

14. Waiting for installation to complete

▪ **Software Development Kit (SDK) installation**

1. Click on this option
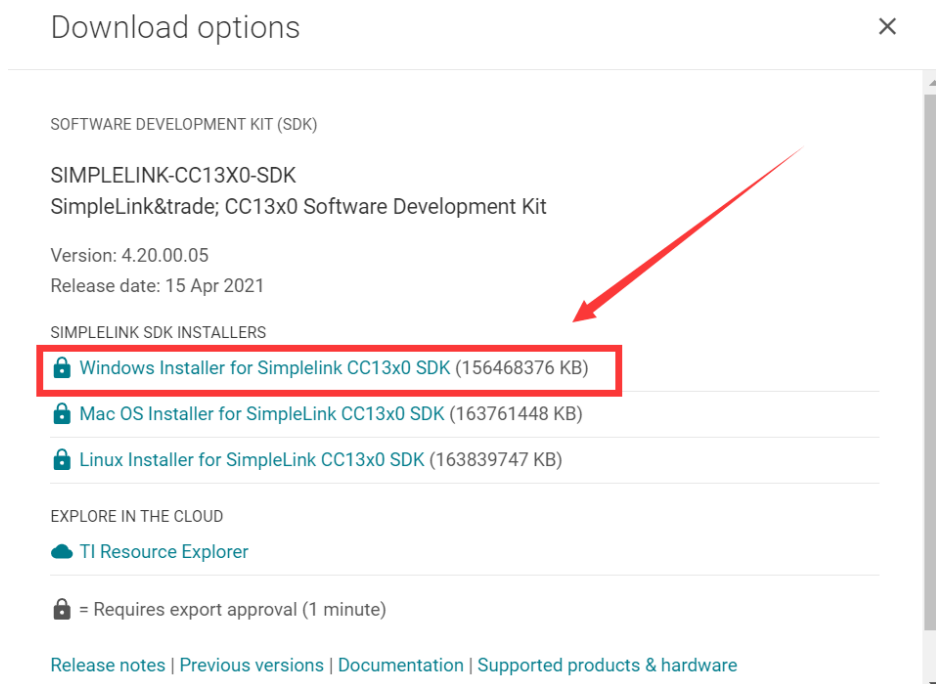
2. Select an option you need to download SDK

3. Log in to your TI account, if you are a new user, register a TI account first

myTI account

myTI FAQ

Existing myTI user?

Your email address

Your myTI password

☑ Remember me

Login

Forgot your password?

By logging in, you agree to
TI's Terms of use & Privacy policy.

4. Select "civil" if your application is for civil use

U.S. Government export approval:

All fields are Required. Incomplete information will be DENIED.

First name:

Last name:

Your email address:

Your full company/university name:

Country this file will be used in:

What end-equipment/application will you use this file for:

☐ Military

☑ Civil

I certify that the following is true:

5.   Select "Yes" and submit

compliance with any such import, use, or export restrictions.

- I / We hereby certify that we will adhere to the conditions above.
- I / We do not know of any additional facts different from the above.
- I / We take responsibility to comply with these terms.
- I / We understand we are responsible to abide by the most current. versions of the Export Administration Regulations and other U.S. export and sanctions laws.

I CERTIFY ALL THE ABOVE IS TRUE: Yes ◉   No ○

Submit

Thank you,
Texas Instruments

6.   Download SDK

TI Home

TI Request

You have been approved to receive this file. Click "Download" to proceed.

In a few moments, you will also receive an email with the link to this file.

Download

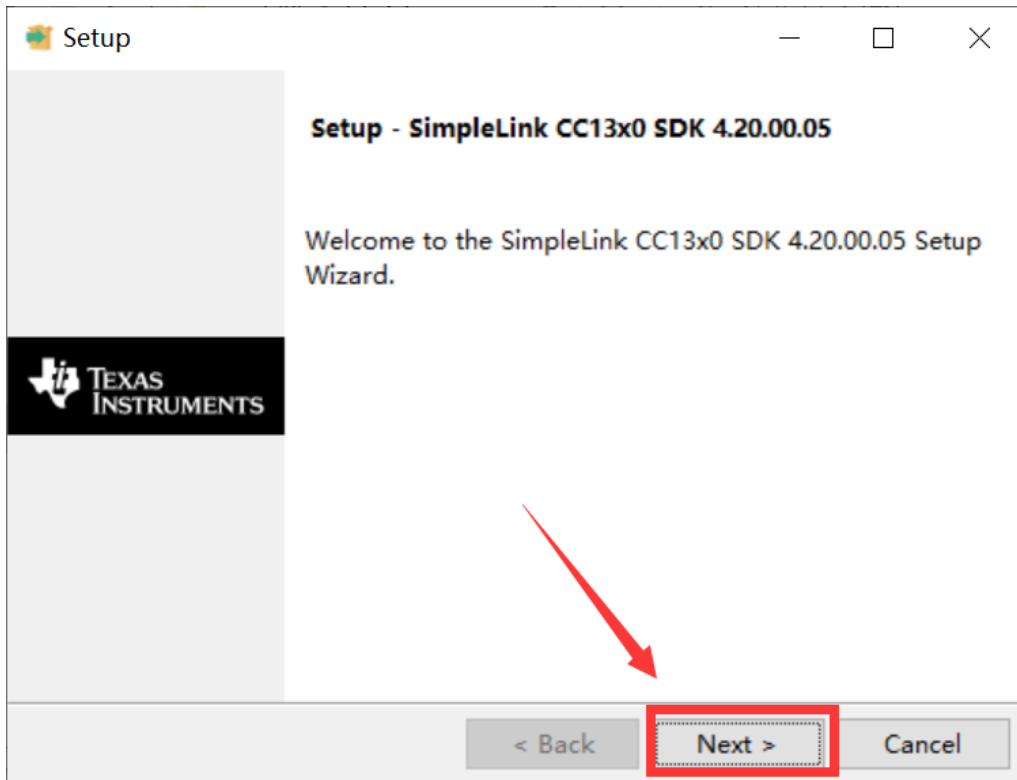Having trouble downloading? Try www.ti.com/software-help

Thank you,
Texas Instruments

7.   Installation

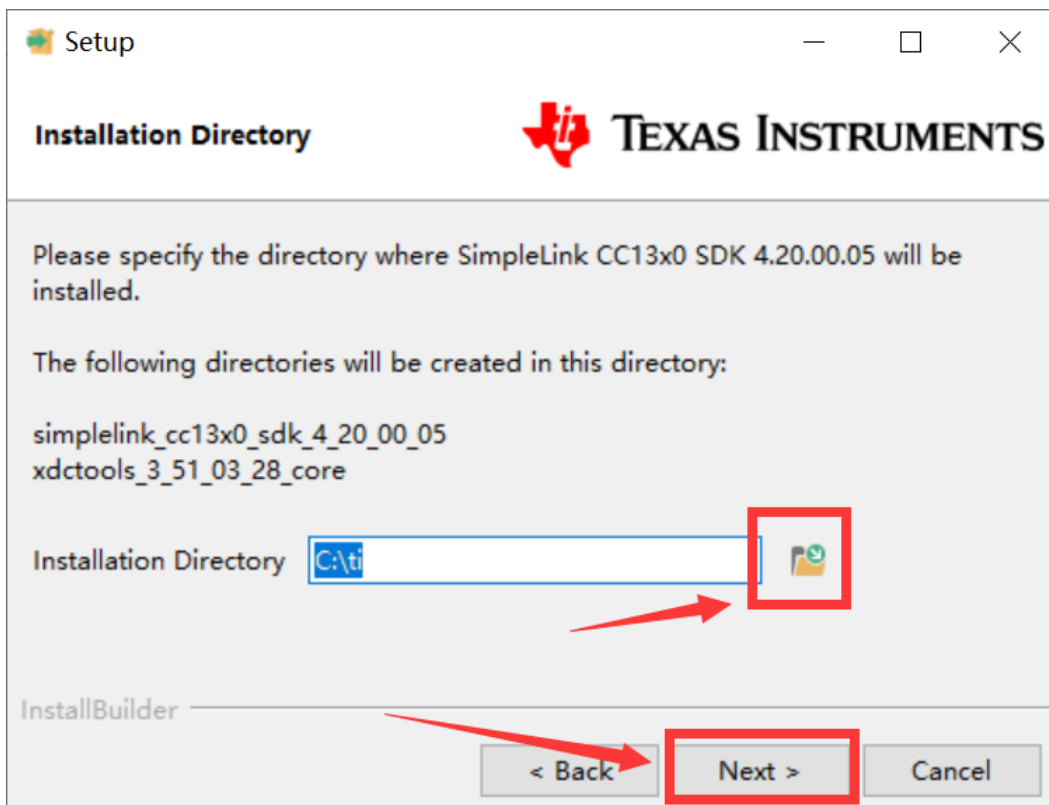simplelink_cc13x0_sdk_4_20_00_05.exe   2021/4/22 14:59

8. Click "Next"

Setup - SimpleLink CC13x0 SDK 4.20.00.05

Welcome to the SimpleLink CC13x0 SDK 4.20.00.05 Setup Wizard.
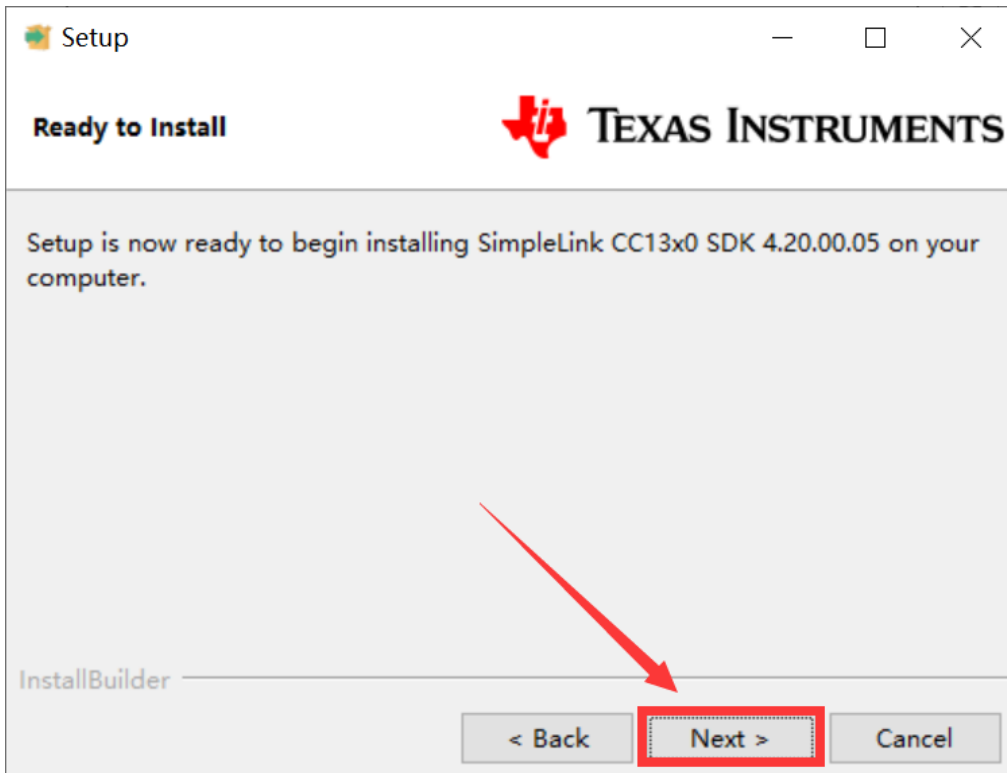
TEXAS INSTRUMENTS

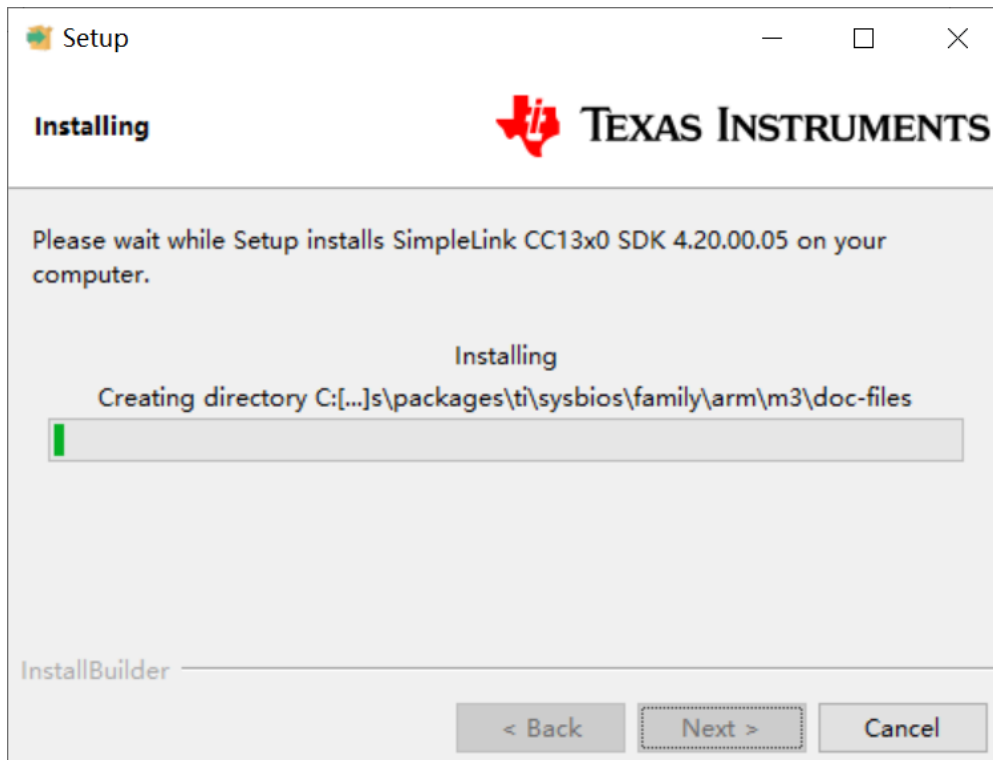< Back   Next >   Cancel

9. Select the default option

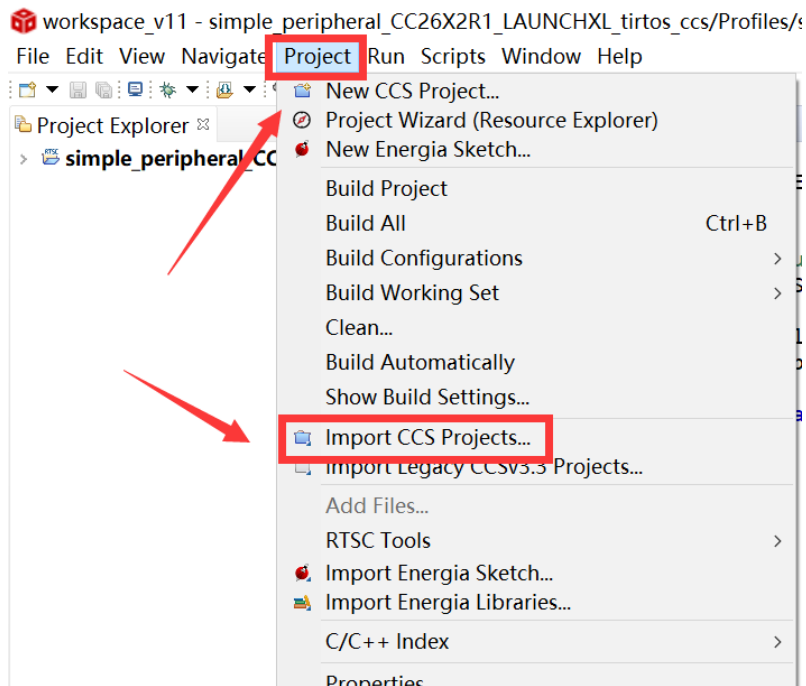10.   Select the Installation directory

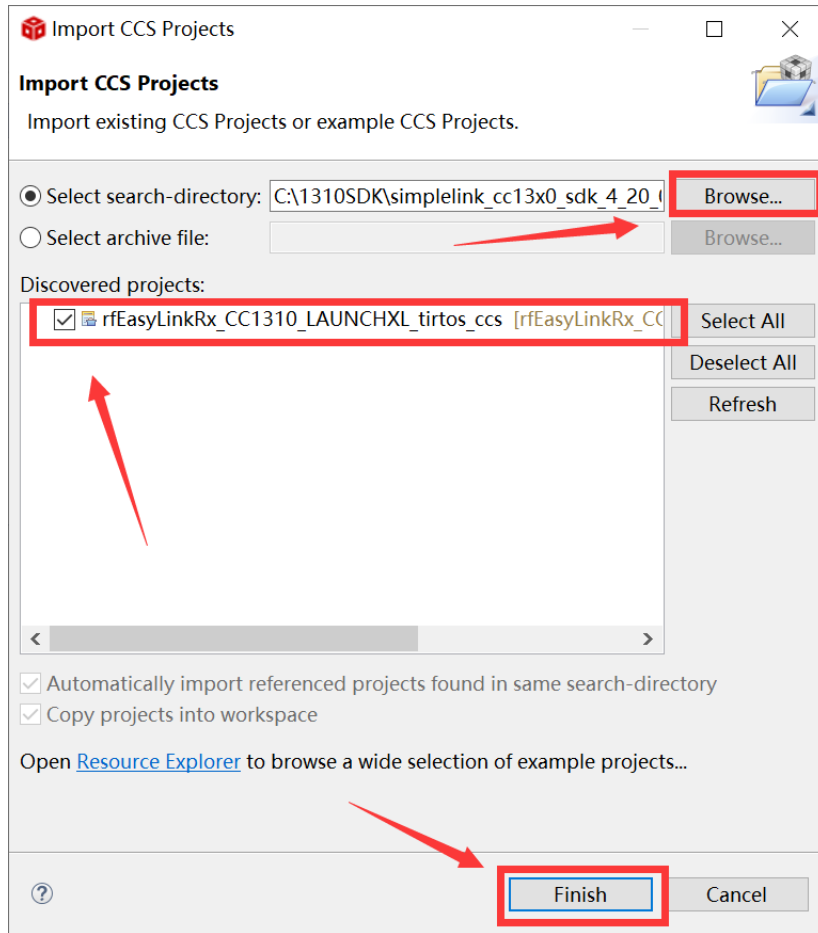11. Click "Next"

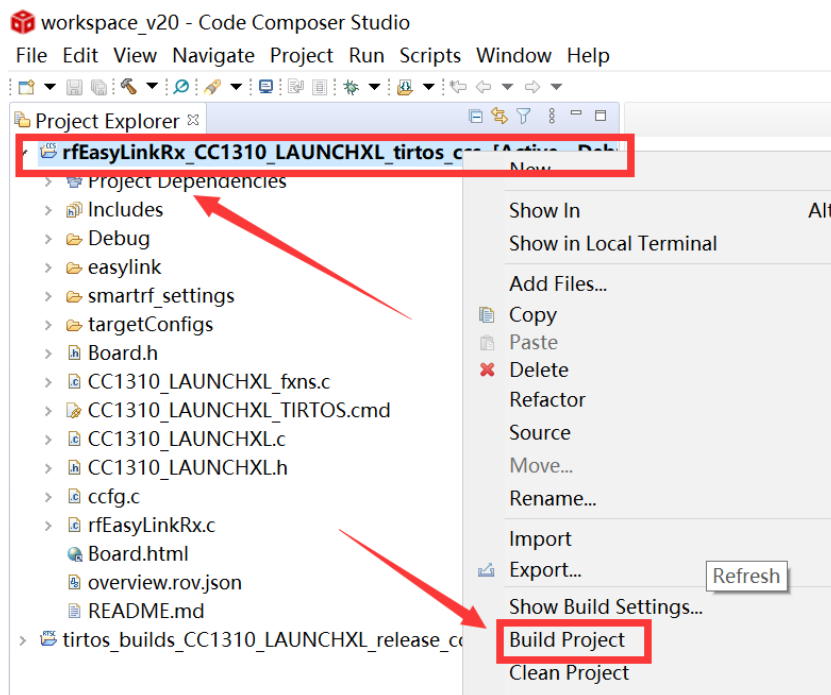12. Waiting for installation to complete

■   Run an example/demo code

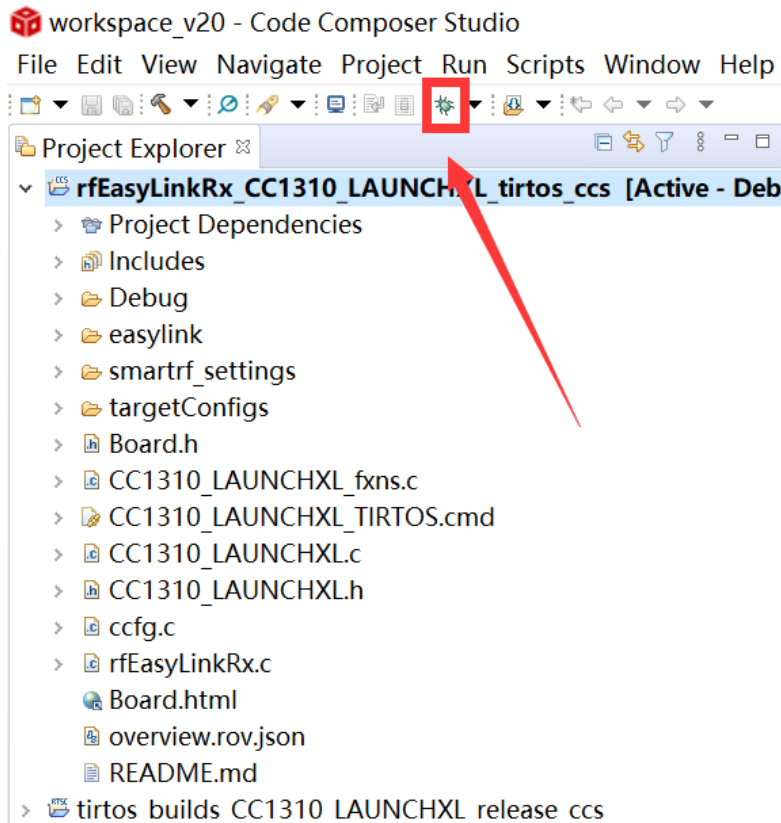1.   For the first module, find the option named "Import CCS project…"

2.   According to the following path to find the sending end project:
ti\simplelink_cc13x0_sdk_4_20_00_05\examples\rtos\CC1310_LAUNCHX
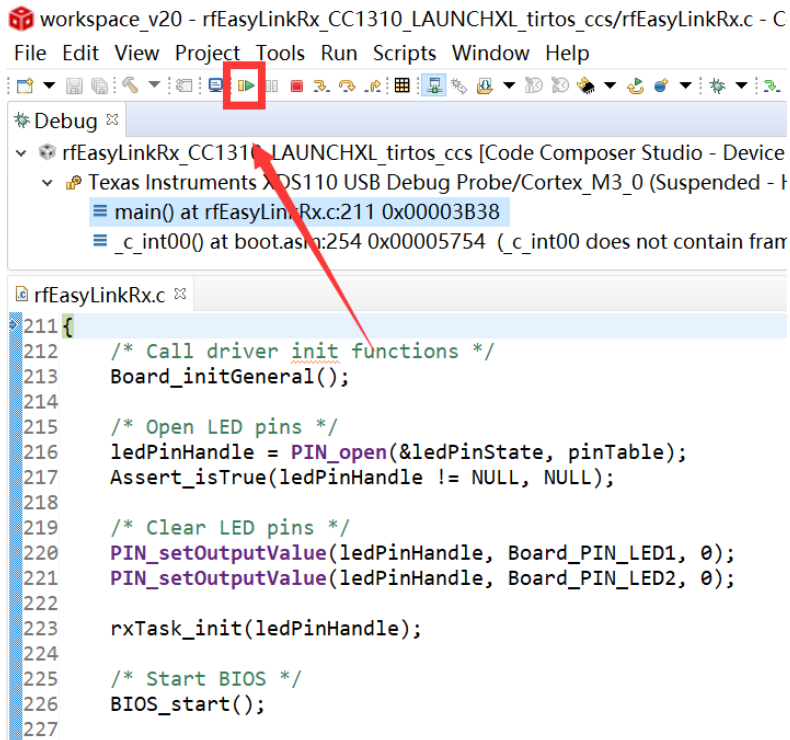L\ easylink\ rfEasyLinkRx\tirtos\ccs

3. Right Click the project to build the receiving end project

4. Click this bug icon (means download and debugging)
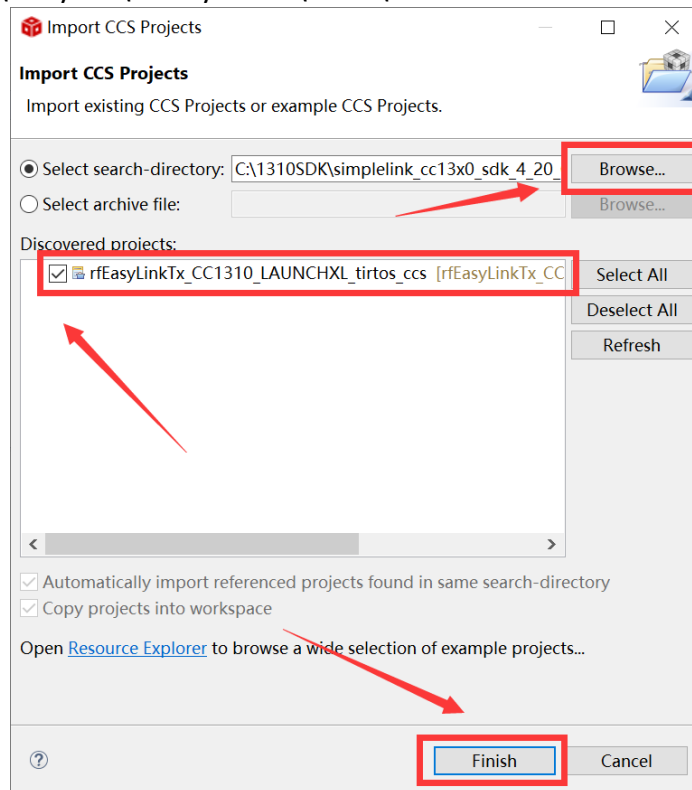

5. Click on this option to start debugging

6. Find the file which is named "rfEasyLinkRx.c" and the function which is named "rxDoneCb", and set a breakpoint at the line as the arrows shows
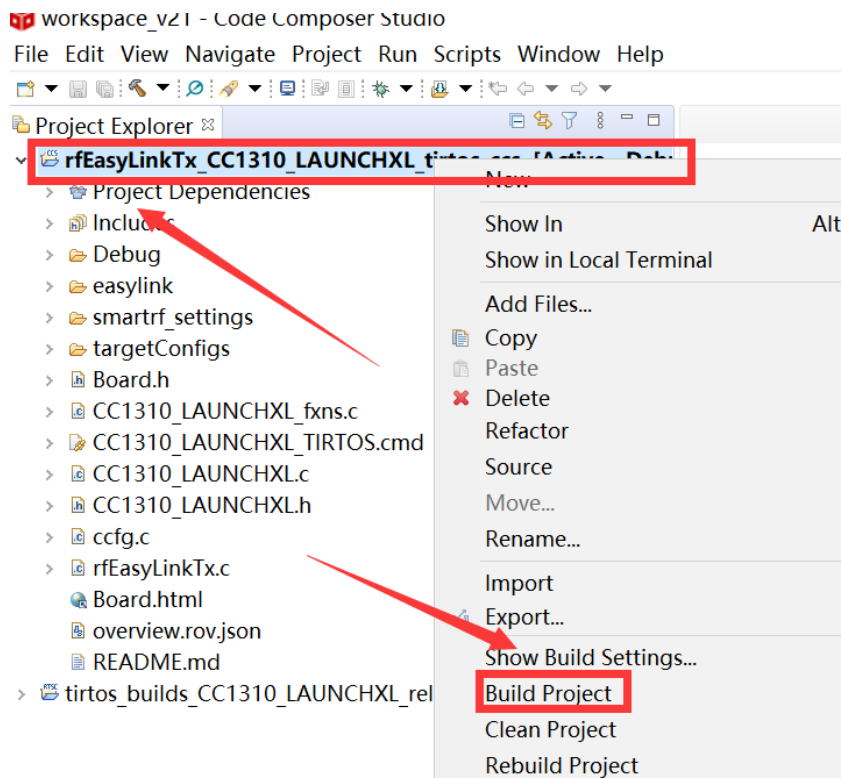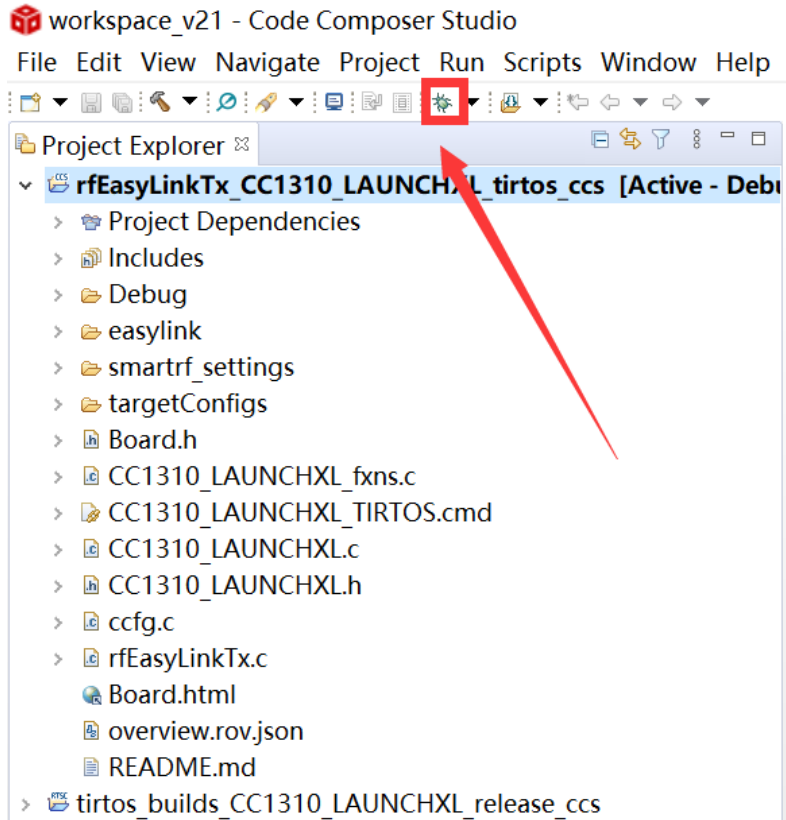

7. For another module, according to the following path to find the sending end project:

ti\simplelink_cc13x0_sdk_4_20_00_05\examples\rtos\CC1310_LAUNCHX L\ easylink\ rfEasyLinkTx\tirtos\ccs
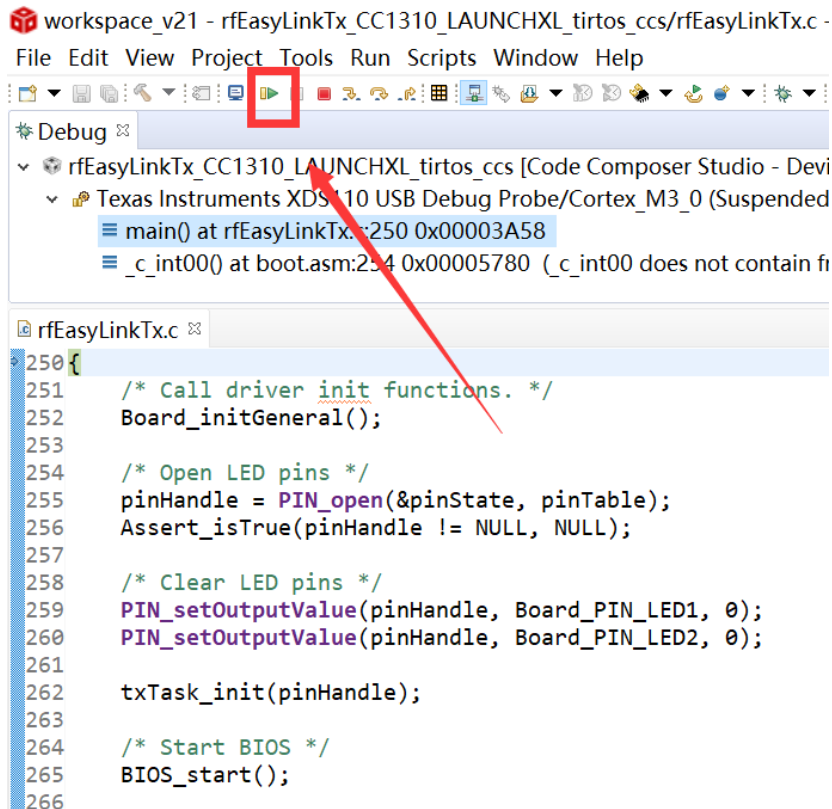
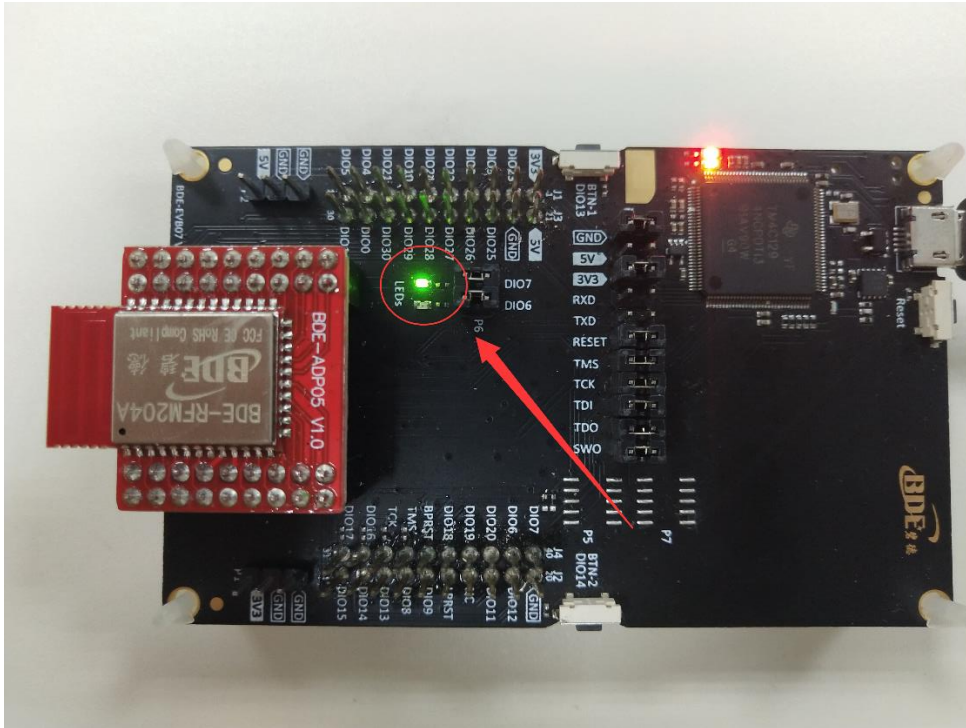8.   Right Click the project to build the sending end project

9.   Click this bug icon (means download and debugging)

10. Click on this option to start debugging

11. You can see the lights flashing (means sending a data uninterruptedly)

12. The program stops at the breakpoint

By far you should've built your first application successfully.

For further development, please check out the CC1310 data sheet, product information and support | TI.com page and download the User guide (https://www.ti.com/lit/pdf/swcu185)

Other Resources

Mac OS Installer for SimpleLink CC13X2 26X2 SDK

Linux Installer for SimpleLink CC13X2 26X2 SDK

Mac OS Installer for Code Composer Studio IDE

Linux Installer for Code Composer Studio IDE

CC1310 SimpleLink™ Ultra-Low-Power Sub-1 GHz Wireless MCU

Windows Installer for SmartRF Flash Programmer 2

More Questions:

Please search existing answers on TI E2E support forums

Contact your local TI sales representative.
Or
Contact BDE Technology, Inc.

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Website: http://www.bdecomm.com/   Email: info@bdecomm.com